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FINE ARTS.

No. I.

PAPER ANATOMICAL MODELS.

The GOLD ISIS MEDAL *was presented to Mr.* GEORGE SIMPSON, *Surgeon,* 6 *Bedford Street, Bedford Square, for the Application of Paper to the Construction of Anatomical Models; Specimens of which have been placed in the Society's Repository.*

6 *Bedford Street, Bedford Square,*
23*d March,* 1841.

SIR,

YOU will much oblige me by laying before the Society of Arts an Anatomical Model (the size of life), which I have executed, for the purpose of facilitating the study of human anatomy. I have hitherto made them, as well as other anatomical subjects, of paper; a material well calculated, from its lightness, durability, strength, and cheapness, to supersede all other compositions. It is better adapted for warm climates than wax preparations, and may be freely handled and examined without the least injury. The Honourable East India Company referred my invention to Dr. Chambers and Dr. Ainslie (their medical officers), who having made a favourable report, they honoured me with a commission to make forty figures, for the purpose of teaching anatomy to the native surgeons of India, for which they paid me two thousand guineas; since which time I have received commissions from her Majesty's Navy Medical Board, Royal Academy, and several other institutions of the country.

The invention is peculiarly my own, and the mode of preparing the figure has never been made public. Trusting that this communication may be found to merit the approbation of the Society,

I am, Sir, &c. &c.

GEORGE SIMPSON,
Surgeon to the Westminster
General Dispensary.

W. A. GRAHAM, Esq.
Secretary, &c. &c.

Mr. Simpson some years ago turned his attention to the construction of anatomical models, in consequence of the difficulty then existing, and the expense incurred, in obtaining subjects for dissection. The materials in general use at that time for anatomical models were wax and plaster. The former was found to be too expensive to come within the means of lecturers and students in general, and was too delicate to be handled in the lecture-room without incurring the risk of considerable damage. The plaster-of-Paris models were also objectionable on account of their great weight and brittleness. Mr. Simpson, therefore, constructed in the first instance the model of an arm, from a dissection made by the late Sir Anthony Carlisle. The material which he used was paper pressed into plaster moulds, and pasted in successive layers after the manner of works in *papier mâché.* Having conceived that his invention would be particularly serviceable for the study of anatomy in warm climates, where wax models cannot be used nor the natural subject be conveniently dissected, he submitted this specimen to the East India Company, who referred his application to their medical officers Dr. Chambers and Dr. Ainslie, on whose favourable report the Company became subscribers for a large number. Dr. Ainslie having suggested that it would be desirable to construct a complete human figure, exhibiting the whole internal and external anatomy, and more particularly those organs likely to be affected by the climate of India, Mr. Simpson accordingly constructed one in paper, similar to the figure exhibited to the Committee. The Honourable East India Company purchased forty figures of this kind, which were sent to various settlements in India for the use of the European surgeons, and for the instruction of the native surgeons, who were assistants in the Company's military hospitals; the religion of the latter prohibiting their studying from natural dissections. Since that period Mr. Simpson has made figures for her Majesty's Navy Medical Board, the Royal Academy of Arts, and for various hospitals and other public institutions.

The right side of the figure exhibited to the Committee represents the superficial arteries, veins, nerves, and muscles; the left side shews the second and third layers of muscles, the deep-seated vessels and nerves, and more particularly those parts concerned in surgical operations. The thoracic and abdominal viscera are removable, so as to exhibit the natural arrangement of all the internal parts. A portion of the skull, when removed, presents a vertical section of the brain and its membranes, the spinal marrow, the tongue, &c.

All the parts are painted in imitation of the natural appearances; and in this part of its manufacture the perfection of the model is, of course, more particularly dependent on the skill of the artist. The following is a general description of the mode of construction: —

A plaster mould is made in the usual way by a cast from the dissection, or clay model, of any part of the human body. The mould, being first well dried, is oiled on the inner surface, and the paper, pasted on one side, is rubbed carefully into every part of it, the moulds being so divided, that the hand, or fingers, may be introduced into every part. The paper is laid in small pieces, in order that it may not be creased, and the process is continued until the thickness necessary for strength is attained; — about twelve layers, more or less, according to the size of the part. The two halves of a mould (of the leg, for instance), being filled with the paper to the necessary thickness, are placed together, and the seams are covered on the inside with pasted paper introduced by the hand; or, if the mould be small, by wooden tools of various shapes. The parts are, at first, dried very gradually by exposure to the air, the temperature is then increased, and, finally, they are taken out of the moulds and stoved. Pieces of wood, placed in various directions, are introduced for the purpose of preventing shrinking in the mould, as well as for giving additional strength, more especially to the parts where the limbs are joined to the trunk by gluing, the limb being held in the required position by supports and ligatures, until the glue is dry. These joints are finished by pasting paper over them, and, when dry, the sharpness necessary for a correct imitation of the dissection is given to them, as well as to any other parts which may require it, by filing, working with ivory-pointed tools, rubbing with fine glass-paper, &c.; a coat of weak parchment size is then given to the whole to prepare it for painting.

10 *Percy Street*, *Bedford Square*,
April 26*th*, 1841.

SIR,

I AM well acquainted with Mr. Simpson's Anatomical Paper Model of the Human Figure, and strongly recommended the Council of the Royal Academy to purchase one for the use of the Students, which they did, and it is used by Mr. Green, the Professor of Anatomy, to illustrate his anatomical lectures. One great feature of the figure is, that it shews, at the same time, the first and second layers of muscles, which is not only of great importance to the Surgeon, but also the artist. I consider Anatomical Models, made of this material, of great utility, for their lightness, strength, and durability.

I remain, &c. &c.

E. H. BAILY, R.A.

W. A. GRAHAM, Esq.
Secretary, &c. &c.

April 20, 1841.

I HAVE examined Mr. Simpson's Anatomical Figure of the Human Body, and consider it extremely useful and ingenious. It is likely to be of great assistance to Lecturers on Anatomy and Surgery, and a valuable addition to public museums.

JAMES LEIGHTON, M.D.

DEAR SIR, *April* 20, 1841.

I HAVE given a lecture on one of your Figures : I cannot say too much in its praise.

Yours &c. &c.

J. C. CARPUE.

G. SIMPSON, Esq.